REMARKS

The specification has been amended to include various header sections as required in the office action.

Claim 16 has been canceled. Claims 1-15 have been amended. Claim 17 has been added. The application now includes claims 1-15 and 17.

Claims 1-15 and 17 have been amended to better characterize the invention and to comply with the requirements of 35 U.S.C. 112, second paragraph. The claims avoid the use of "temporal relation" and "time profile" (although these terms are appropriate and supported by the patent application) and now require the measurement of a flight time or time of flight as is described in the application on page 9 (and elsewhere) and shown in Figures 3 and 4. Claims 2 and 3 have been amended to set forth the nanosecond or picosecond range as discussed on page 5, lines 12-13 (and elsewhere). With respect to claims 5 and 6, original claim 5 specified "simultaneously and in parallel", and claim 5 has been amended to better clarify how detection is performed. Claim 11 now uses the comprising transition. Further amendments have been made throughout the claim set to address antecedent basis and better clarify the nature of the claimed invention.

Claims 1-3, 5-8, 11-13 and 16 were rejected for anticipation by U.S. Patent 7,364,574 to Flower. Claims 9, 10, and 15 were rejected as being obvious over Flower. Claims 4 and 14 were rejected as being obvious over Flower in view of U.S. Patent 5,400,791 to Schlier. Each of these rejections is traversed.

Flower describes a therapy method for eye lesions. In order to perform the therapy by means of a laser treatment (photocoagulation or photodynamic therapy) the blood feed vessel have to be identified. For this, a dye bolus is injected in order to establish an angiogram by means of a camera. The bolus is made of a fluorescent dye and the fluorescence of said fluorescent dye is excited by excitation light emitted by a laser.

Whilst it is true that a fluorescent dye bolus is used for producing the angiogram, the evaluation made by just imaging the vessel structure in the fundus of the eye by means of the fluorescence radiation.

The present invention, in contrast, uses a completely different measurement and evaluation method by establishing a temporal correlation in the

sub-nanosecond range (picosecond range) between the excitation radiation on the one hand and the fluorescence radiation, caused by the excitation radiation, on the other hand.

The most important way of establishing the correlation is to measure the time difference between the excitation radiation and the arrival of the fluorescence photons at the detector. In case the excitation radiation is a short pulse (having a duration in the picosecond range), the occurrence of the respective (broadened) pulse of the fluorescence radiation represents the time-of-flight distribution of the photons. That is, what was originally termed "time profile". The time of flight is not a single value, but has a statistical distribution due to the statistical nature of multiple scattering in the tissue.

The measured time-of-flight distribution depends on depth (distance to the surface of the body) at which the bolus passes the detection region, thus providing a means for the depth localization of the dye bolus (e.g., in brain tissue vs. overlying tissue). This is markedly different from the lateral localization of vessels in an angiogram as described by Flower.

Regarding claims 5 and 6, the parallel and simultaneous detection of diffusively reflected light means the combination of the fluoresecence method with an alternative method to detect the same dye bolus, e.g., by means of its absorption properties. There is no relation to the combined use of both methods by Flower.

Regarding claims 2, 12, and 13, Flower uses pulse laser radiation, but the pulses are much longer (milliseconds). They are not used with the aim of performing time-resolved detection. Moreover, such long pulses are not suitable to perform time-of-flight measurements in tissue. The time of flight photons through tissues is typically on the order of 1 ns and requires pulses in the picosecond range and a picosecond time resolution of the detection unit.

A further method disclosed in paragraph [0020] of the application is addressed by new claim 17.

Consequently, the present invention is established by the evaluation method comprised of correlating the measured fluorescent signal to the respective excitation signal as defined in claims 1 and 17.

U.S. Patent 5,400,791 to Schlier has more or less the same disclosure with

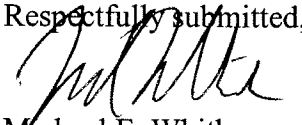
respect to the angiography as Flower. Therefore, even the combination of Flower and Schlier would not make the claimed invention obvious to one of ordinary skill in the art. That is, the evaluation of the present invention which provides completely different pieces of information compared with a simple angiogram.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-15 and 17 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



Michael E. Whitham
Reg. No. 32,635

Whitham, Curtis, Christofferson & Cook, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190

Tel. (703) 787-9400
Fax. (703) 787-7557

Customer No.: 30743